The embodiments of the invention in which an exclusive property or privilege is claimed are defined as follows:

1.	A method for processing content requests, the method comprising:

obtaining a content request including a request for display data corresponding to a specification of color values and transparency values for a plurality of pixels, wherein each pixel has a specific color value and a specific transparency value, the specific color value and the specific transparency values defined by a number of bits of data, and wherein a format for a response to the content requests corresponds to a number of bits of data for color values and a number of bits of data for transparency values;

generating a color palette corresponding to a selection of a subset of pixel color values found in the plurality of pixels within the requested display data, wherein a size of the color palette is determined by the number of bits for color values in the format for the response to the content request.

for each pixel in the display, mapping an original pixel color value to a color value in the color palette;

if the number of bits defining an original pixel transparency value is less than or equal to the number of bits for transparency values in the format for the response to the content request, appending the original transparency values to the mapping of pixel color values for each pixel in the display; and

transmitting the color palette and the mapped color values and transparency values in response to the content request.

2.	The method as recited in Claim 1, wherein the format of a response to the content request is dynamically determined, the method further comprising transmitting the format of a response to the content request with the color palette and the color and transparency values.

3.	The method as recited in Claim 2, wherein the format is automatically determined by processing criteria associated with the content request.

4.   The method as recited in Claim 1, wherein generating a color palette corresponding to a selection of a subset of pixel color values found in the plurality of pixels within the requested display data includes:

generating a color octree corresponding to a mapping of pixel colors, wherein the color octree has a plurality of leaf nodes tracking a cumulative color value for a plurality of pixels in the display data;

for each leaf node in the color octree, determining whether the number of pixels tracked in the leaf node exceeds a merging threshold;

if the number of number of pixels tracked in the leaf nodes does not exceed the merging threshold, merging the leaf node with an adjacent leaf node in the color octree;

increasing the merging threshold and processing each leaf node with the increased merging threshold; and

if the number of leaf nodes is less than or equal to the size of the color palette, generating a color palette corresponding to a mapping each remaining leaf node color value.

5.   The method as recited in Claim 1, wherein generating a color palette corresponding to a selection of a subset of pixel color values found in the plurality of pixels within the requested display data includes:

(a)   generating a color octree corresponding to a mapping of pixel color values, wherein the color octree includes a plurality of leaf nodes tracking a cumulative color value for a plurality of pixels in the display and wherein each leaf node includes a leaf node lock threshold corresponding to its position within the color octree;

(b)   for each leaf node in the color octree, determining whether the number of pixels tracked by the leaf node is less than a merging threshold;

(c)   if a number of pixels tracked by the leaf node is less than a merging threshold, determining whether a number of unique colors represented by a direct child of a common parent node is greater than a leaf node lock threshold ;

(d)   if the number of unique colors represented by a direct child of a common parent node is greater than a leaf node lock threshold corresponding to the direct child, merging the leaf node with an adjacent node in the color octree;

(e)   if the number of remaining leaf nodes is greater than the size of the color palette, increasing the merging threshold and a merging threshold count and repeating (a) – (d) until the merging threshold count is greater than a count threshold;

(f)   adjusting the leaf node lock threshold and resetting the merging threshold and repeating (a) – (e) until the merging threshold count is greater than a count threshold; and

(g)   if the number of leaf nodes is less than or equal to the size of the color palette, generating a color palette corresponding to a mapping each remaining leaf node color value.

6.   The method as recited in Claim 1 further comprising if the number of bits defining an original pixel transparency value is greater than the number of bits for transparency values in the format for the response to the content request, optimizing the original transparency value.

7.   The method as recited in Claim 6, wherein optimizing the original transparency value includes truncating one or more bits from the original transparency values.

8.   The method as recited in Claim 6, wherein optimizing the original transparency values includes:

generating a transparency palette corresponding to a selection of a subset of pixel transparency values found in the plurality of pixels within the requested display data, wherein a size of the transparency palette is determined by the number of bits for transparency values in the format for the response to the content request;

for each pixel in the display, mapping an original pixel transparency value to a transparency value in the color palette; and

appending the mapped transparency value to the mapped color value for each pixel.

9.   The method as recited in Claim 1, wherein original pixel color and transparency values correspond to 32 bits.

10.   The method as recited in Claim 1, wherein the requested display data corresponds to a plurality of overlapping images, the method further comprising repeating (b) – (d) for each image in the plurality of overlapping images.

11.   A computer-readable medium having computer executable instructions for performing the method recited in Claim 1.

12.   A method for processing content requests corresponding to complex displays including a plurality of images, wherein at least a portion of the two or more images overlap, the method comprising:

for each image in a complex display, obtaining a specification of color values and transparency values for a plurality of pixels in the image, wherein each pixel has a specific color value and a specific transparency value, the specific color value and the specific transparency values defined by a number of bits of data;

generating a color palette corresponding to a selection of a subset of pixel color values found in the plurality of pixels within the requested display data, wherein a size of the color palette is determined by the number of bits for color values defined in a format for the response to the content request;

for each pixel in the display, mapping an original pixel color value to a color value in the color palette;

if the number of bits defining an original pixel transparency value is less than or equal to a number of bits for transparency values in a format for the response to the content request, appending the original transparency values to the mapping of pixel color values for each pixel in the display; and

transmitting the color palette and the mapped color values and transparency values for each image in the two or more images in response to the content request, wherein the complex image is rendered directly from the mapped color values and transparency values without recreating the two or more images.

13.   The method as recited in Claim 12, wherein the format of a response to the content request is dynamically determined, the method further comprising transmitting the

format of a response to the content request with the transmission of the color palette and the color and transparency values.

14. The method as recited in Claim 13, wherein the format is automatically determined by processing criteria associated with the content request.

15. The method as recited in Claim 12, wherein generating a color palette corresponding to a selection of a subset of pixel color values found in the plurality of pixels within the requested display data includes:

generating a color octree corresponding to a mapping of pixel colors, wherein the color octree has a plurality of leaf nodes tracking a cumulative color value for a plurality of pixels in the display data;

for each leaf node in the color octree, determining whether the number of pixels tracked in the leaf node exceeds a merging threshold;

if the number of number of pixels tracked in the leaf nodes does not exceed the merging threshold, merging the leaf node with an adjacent leaf node in the color octree;

increasing the merging threshold and processing each leaf node with the increased merging threshold; and

if the number of leaf nodes is less than or equal to the size of the color palette, generating a color palette corresponding to a mapping each remaining leaf node color value.

16. The method as recited in Claim 12, wherein generating a color palette corresponding to a selection of a subset of pixel color values found in the plurality of pixels within the requested display data includes:

(a) generating a color octree corresponding to a mapping of pixel color values, wherein the color octree includes a plurality of leaf nodes tracking a cumulative color value for a plurality of pixels in the display and wherein each leaf node includes a leaf node lock threshold corresponding to its position within the color octree;

(b) for each leaf node in the color octree, determining whether the number of pixels tracked by the leaf node is less than a merging threshold;

(c)   if a number of pixels tracked by the leaf node is less than a merging threshold, determining whether a number of unique colors represented by a direct child of a common parent node is greater than a leaf node lock threshold corresponding to the direct child;

(d)   if the number of unique colors represented by a direct child of a common parent node is greater than a leaf node lock threshold corresponding to the direct child, merging the leaf node with an adjacent node in the color octree;

(e)   if the number of remaining leaf nodes is greater than the size of the color palette, increasing the merging threshold and a merging threshold count and repeating (a) – (d) until the merging threshold count is greater than a count threshold;

(f)   adjusting the leaf node lock threshold and resetting the merging threshold and repeating (a) – (e) until the merging threshold count is greater than a count threshold; and

(g)   if the number of leaf nodes is less than or equal to the size of the color palette, generating a color palette corresponding to a mapping each remaining leaf node color value.

17.   The method as recited in Claim 12 further comprising if the number of bits defining an original pixel transparency value is greater than the number of bits for transparency values in the format for the response to the content request, optimizing the original transparency value.

18.   The method as recited in Claim 6, wherein optimizing the original transparency value includes truncating one or more bits from the original transparency values.

19.   The method as recited in Claim 6, wherein optimizing the original transparency values includes:

generating a transparency palette corresponding to a selection of a subset of pixel transparency values found in the plurality of pixels within the requested display data, wherein a size of the transparency palette is determined by the number of bits for transparency values in the format for the response to the content request;

for each pixel in the display, mapping an original pixel transparency value to a transparency value in the color palette; and

appending the mapped transparency value to the mapped color value for each pixel.

20.   The method as recited in Claim 12, wherein original pixel color and transparency values correspond to 32 bits.

21.   A computer-readable medium having computer executable instructions for performing the method recited in Claim 12.

22.   A computer-readable medium having computer-executable components for approximating pixel display properties, the computer-executable components comprising:

a display format component for allocating a number of bits to approximate pixel color values for each pixel in a display and a number of bits to approximate pixel transparency values for each pixel in a display;

a plurality of pixel color value components defining a pixel color value for each pixel in the display, wherein the pixel color value in the pixel color value components corresponds to a mapping of an original pixel color value to a color palette, wherein the color palette includes a subset of the original pixel colors in the display and wherein a size of the color palette is defined by the number of bits allocated to approximate pixel color; and

a plurality of transparency value components defining a pixel transparency value for each pixel in the display, wherein the transparency value in the transparency value components corresponds to an original pixel transparency value if the number of bits utilized to define the pixel transparency values is less than or equal to the number of bits defined to approximate pixel transparency;

wherein the plurality of pixel color value components and plurality of transparency value components are directly rendered to reproduce an image on a display.

23.   The computer-readable medium as recited in Claim 22, wherein the transparency values in the plurality of transparency value components correspond to a mapping of the original pixel transparency value to a transparency palette, wherein the

transparency palette includes a subset of original pixel transparency values in the display and wherein a size of the transparency palette is defined by the number of bits allocated to approximate pixel transparency.

24.   The computer-readable medium as recited in Claim 22, wherein the number of bits to approximate pixel color and transparency values in the display format component is dynamically allocated.

25.   The computer-readable medium as recited in Claim 22, wherein the pixel color value components and the pixel transparency value components are organized by pixel and wherein the display format component further defines an order for the pixel color value and transparency value components.

26.   The computer-readable medium as recited in Claim 25, wherein the pixel color value component is severable from the pixel transparency value component for each pixel.